

**MULTIPLE STAGE AND/OR NESTED PREDISTORTION SYSTEM
AND METHOD**

ABSTRACT OF THE DISCLOSURE

5 A multiple stage and/or nested predistortion system and method uses an inner predistortion function to adjust a signal being input into a distortion generating circuit and at least one outer predistortion function to adjust the signal being input into the inner predistortion function. Thus, the inner predistortion function can reduce the distortion from the distortion generating circuitry, and any remaining distortion can be
10 reduced by the outer predistortion function. For example, in an adaptive predistortion system where the distortion generating circuit is an amplifier, an inner predistortion loop comprises an inner predistortion function which distorts the signal on the main signal path prior to the amplifier. The inner predistortion function can be produced using an output of the inner predistortion function and an output of the amplifier. An
15 outer predistortion loop comprises an outer predistortion function which distorts the input signal prior to the inner predistortion function. The outer predistortion function can be determined using an output to the outer predistortion function and the output to the inner predistortion loop. As such, the signal on the signal path is predistorted in multiple stages prior to the amplifier to compensate for the distortion generated by the
20 amplification of the signal, and the resulting amplified signal is produced with reduced distortion.